UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,361	12/19/2005	Jill MacDonald Boyce	PU030180	9742

24498 7590 09/07/2007

JOSEPH J. LAKS, VICE PRESIDENT
THOMSON LICENSING LLC
PATENT OPERATIONS
PO BOX 5312
PRINCETON, NJ 08543-5312

EXAMINER	
ROBERTS, JESSICA M	

ART UNIT	PAPER NUMBER
2621	

MAIL DATE	DELIVERY MODE
09/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/561,361	BOYCE ET AL.	
	Examiner	Art Unit	
	Jessica Roberts	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 13 is rejected under 35 U.S.C 101 because the claimed invention is directed to non-statutory subject matter.

Re claim 13, defines a program storage device readable by machine embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized-Guidelines Annex IV). That is, the scope of the presently claimed "program storage device..." can range from paper on which the program is written, to be a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim 13 does not comply with the requirement of MPEP 2106. I.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 2 recites the limitation "the sliding time window" in line 7. There is insufficient antecedent basis for this limitation in the claim.

3. Per claims 3-10, are rejected for being dependent upon rejected claim 2.

4. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 is indefinite because it is not clear if the time window is a sliding time window or a time window of preset duration. As best understood by the Examiner, the examiner takes the position that the time window is the same as the sliding time window.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> **(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.**

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Wang et al., US 6,118,817.

7. Regarding claim 1, Wang teaches an encoder (fig. 1) for encoding a sequence of pictures as a plurality of block transform coefficients (direct cosine transformation (DCT) on the motion-compensated macroblocks of the motion-compensated frame to produce a transformed frame, column 6 line 56-59 and fig. 1) to meet network traffic model restrictions (motion video signal encoder maximizes image quality without exceeding

transmission bandwidth available, See abstract), the encoder comprising an iterative loop for selecting one of a plurality of quantization parameter values for each picture (a primary open rate loop control selects an optimized quantization parameter Q by determining a desired size for an individual frame, column 4 line 14-16. Furthermore, the examiner takes the position that a loop is a reiteration of a set of instructions in a routine or program).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 2-22 are rejected under 35 U.S.C 103(a) as being unpatentable over Wang et al., US 6,118,817 in view of Boice et al., 5,978,029 as applied to claim 1 above and further in view of Wu et al., US 7,016,337.

Regarding claim 2, Wang teaches an encoder as defined in claim 1, the iterative loop comprising: selecting means for selecting for each picture of the sequence one of

the plurality of quantization parameter values responsive to the quantization parameter values and bitrate operating points of the neighboring pictures in the sliding time window (Wang teaches where a primary open loop rate control selects an optimized quantization parameter Q, by determining a desired size for an individual frame and comparing the size of the frame as encoded to the desired frame. Wang also discloses where if the frame size is greater than the desired size, quantization parameter Q is increased to reduce the size of the subsequently encoded frames to consume less bandwidth; and if the encoded frame size is less than the desired size, quantization parameter Q is reduced to increase the size of the subsequently encoded frame to fully consume available bandwidth. Further, Wang teaches where each frame is encoded in a manner which maximizes image quality while approaching full consumption of available bandwidth and guarding against exceeding available bandwidth, column 4 lines 14-30). The examiner takes the position that the encoded video would be encoded to the response of the selected quantization parameters since the video is encoded depending on the adjusted quantization parameter Q.

Wang is silent in regards pre-encoding means for pre-encoding the sequence of pictures for each of a plurality of quantization parameter values; and pre-encoding means for encoding each picture of the sequence using the quantization parameter value selected for that picture. However, Boice teaches pre-encoding means for pre-encoding the sequence of pictures for each of a plurality of quantization parameter values (Using the calculated statistics, adaptive encoding of the video sequence is then carried out by controlling one of more encoding parameters of the real-time process. For

example, bit allocation, quantization parameter(s), encoding mode, etc., can be changed from frame to frame or marcroblock to macroblock within a given frame according to derived statistics of a characteristic (e.g., scene content) of the particular frame(s), column 7 lines 30-39 . Further disclosed, is encoder subsystem E1 is programmed to generate the desired statistics, which are important to the encoding subsystem's (E2) specific bit rate control algorithm, column 7 line 50-52 and column 8 line 1-5 The examiner takes the position that encoder #1 (E1) and controlling processor combined allow for pre-encoding; and the quantization(s) would be an important statistic needed for encoding subsystem E2 specific bit rate control algorithm. Boice further teaches pre-encoding means for encoding each picture of the sequence using the quantization parameter value selected for that picture (Boice teaches the statistical processing is accomplished within a processor couple between the first and second encoder and to develop encoding parameters for the second encoder. The second encoder then uses the enhanced encoding parameters to provide high quality and highly compressed video stream, column 3 line 29-35, and fig. 7 and 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of Wang with the technique of Boice for enhancing picture quality of an encoded video sequence while still obtaining a high compression rate by providing a real-time VBR a video encoding scheme.

Both Wang and Boice are silent in regards to a sliding window technique, however Wu teaches where an encoder employs a "look a-head window" that is used to determine at what rate each channel must be sent. The "look a-head window" is used with the

statistical re-multiplexer to determine to send out a number of bits corresponding to a time T for each of the channels, column 13 lines 65-67 and column 14 lines 1-20 and fig. 11.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of both Wang and Boice with the technique of Wu for providing a system that ensures that the bit rate of transmission matches the channel capacity.

11. Regarding claim 3, An encoder (Wang, fig. 1) as defined in claim 2 wherein the quantization parameter value selected for a sliding window encodes a window's worth of pictures at about a target picture rate (Wang discloses the use of a frame rate controller **120** to control the frame rate of the encoded video signal, column 15 line 18-20). Further disclosed by Wang is that the frame rate controller compares the cumulative bandwidth balance to a maximum threshold which is periodically adjusted by frame rate controller and depends upon the current frame rate at which video signal encoder is encoding frames, column 15 line 28-36. The examiner takes the position that since the frame rate controller has both a maximum and minimum threshold value for the encoder to use while encoding video frames, would be a functional equivalent of sliding window for flow control for the transformation of data.

12. Regarding claim 4, An encoder (Wang, fig. 1) as defined in claim 2 wherein the quantization parameter value selected for a sliding window encodes a window's worth of pictures at about a target bitrate (Boice teaches where the controlling processor provides quantization parameters to the second subsystem, and E1 (the first

subsystem) provides this into E2 (the second subsystem), where E1 produces information on scene change, quality, bits used and target bit rate, column 4 line 34-43). The examiner takes the position that the subsystem as disclosed by Boice would be capable of providing the target bit rate for the sliding window as disclosed by Wu to allow for encoding of a windows worth of pictures.

13. Regarding claim 5, An encoder as defined in claim 2 wherein the quantization parameter values selected for each picture in the video sequence and for the neighboring pictures in the same time window as the given picture are chosen to encode the pictures to be transmitted within a time window of preset duration to be encoded within a target number of bits (Wu, discloses where the second output of the video scene analyzer is coupled to the input of the compressor. The second output provides the video data and relevant timing information so that it can be used by the compressor to provide a bit stream at a desired target bit rate, column 9 lines 25-31). Further disclosed by Wu is the use of a scheduler with the multiplexer to provide an output bit stream at a given rate (see abstract, column 13 lines 43-45 and fig. 10).

14. Regarding claim 6, the combination of Wang, Boice, and Wu as a whole further teaches an encoder as defined in claim 2 wherein the sequence of video pictures comprises a group of pictures (Boice, GOP, column 8 line 11).

15. Regarding claim 7, the combination of Wang, Boice, and Wu as a whole further teaches an encoder (Wang, fig. 1) as defined in claim 2 wherein the sequence of video pictures comprises pre-stored video content (Boice, the input pictures must be temporarily stored until used for encoding, column 6 line 3-5).

16. Regarding claim 8, the combination of Wang, Boice, and Wu as a whole further teaches an encoder (Wang, fig. 1) as defined in claim 2 wherein a portion of sequence of video pictures to be transmitted within a preset time duration meets a network traffic model restricting the number of bits to be transmitted within the preset time duration (Wu discloses where the look-ahead window is used with the statistical re-multiplexer may decide to send out number of bits corresponding to a time T1 for each of the channels, where T1 may be less than or equal to T. For the case T1<T, the statistical re-multiplexer 504 examines the input bit streams from all different programs in an interval T, and only sends out T, part of the data. In the next iteration, the statistical re-multiplexer 504 examines the data after T.sub.1, and the examining data period still uses a time window size of T, column 14 lines 3-18). The examiner takes the position that by limiting and sending out just part of the data within a set time window size would restrict the data to meet network traffic.

17. Regarding claim 9, the combination of Wang, Boice, and Wu as a whole further teaches an encoder (Wang, fig. 1) as defined in claim 2 wherein the selecting means for selecting one of the plurality of quantization parameter values for each picture of the video sequence (Wang, primary open loop rate control, column 4 line 14-30) comprises multi-pass encoding means (Boice, fig. 5 and 7) to optimize the quantization parameter value selected to encode each picture (Wang, If the cumulative bandwidth balance deviates from a predetermined range, quantization is adjusted as needed to either improve image quality to more completely consume available bandwidth or to reduce image quality to thereby consume less bandwidth, See abstract).

18. Regarding claim 10, the combination of Wang, Boice and Wu as a whole further teach where an encoder (Wang, fig. 2) as defined in claim 2 wherein the pre-encoding (Boice, encoder subsystem 1 (E1), fig. 5 and 7) means for pre-encoding the sequence of pictures for each of the plurality of quantization parameter values comprises means for re-using motion vector values (Boice discloses during a first pass of encoding, i.e., via subsystem E1, motion statistics based on motion vectors are calculated by encoding engine 410. Encoding subsystem E2 then outputs an encoded bitstream using a second pass through encoding engine 410, column 8 lines 39-44). Furthermore, the examiner takes the position since the motion vectors are used to calculate the motion statistics and then output to encoding subsystem 2, this would necessitate that the motion vectors are being used more than one, or re-used. Further, it would be inherent that the motion vectors are re-used during the encoding and decoding process. The motion vectors that are obtained from the motion estimator would be the same motion vectors that are used in the motion compensator until a scene change is detected.

19. Regarding claim 11, the combination of Wang, Boice, and Wu as a whole further teach where an encoder (Wang, fig. 1) as defined in claim 1 in combination with a decoder (Wang, fig. 11) for decoding encoded block transform coefficients (Wang, inverse discrete cosine transform, fig. 1) that meet network traffic model restrictions to provide reconstructed pixel data (Wang, frame reconstructor, fig. 1. The examiner takes the position that in order to reconstruct the frame, it would be necessary for have reconstructed pixel data to comprise the reconstructed frame), the decoder comprising a variable length decoder (Wu, VLC decoding, fig. 2) for decoding video data

corresponding to a time window of preset duration according to a network traffic model (Wu, discloses where the video data is encoded according to preset time duration, column 14 lines 3-18. The examiner takes the position that if the video data is encoded with respect to a preset time duration, it would also be decoded according to a preset time duration.)

20. Regarding claim 12, the combination of Wang, Boice and Wu as a whole further teach a codec (Wang, fig. 1) comprising an encoder (Wang, fig. 1) as defined in claim 1, and a decoder for decoding encoded block transform coefficients (Wang, inverse DCT, fig. 1) that meet network traffic model restrictions to provide reconstructed pixel data (Wang, frame reconsructor, fig. 1. The examiner takes the position that in order to reconstruct the frame, it would be necessary for have reconstructed pixel data to comprise the reconstructed frame.), the decoder comprising a variable length decoder (Wu, VLC decoding, fig. 2) for decoding video data corresponding to a time window of preset duration according to a network traffic model (Wu, discloses where the video data is encoded according to preset time duration, column 14 lines 3-18. The examiner takes the position that if the video data is encoded with respect to a preset time duration, it would also be decoded according to a preset time duration.) pre-encoding the sequence of pictures for each of a plurality of quantization parameter values (Boice , using the calculated statistics, adaptive encoding of the video sequence is then carried out by controlling one of more encoding parameters of the real-time process. For example, bit allocation, quantization parameter(s), encoding mode, etc., can be changed from frame to frame or marcroblock to macroblock within a given frame

according to derived statistics of a characteristic (e.g., scene content) of the particular frame(s), column 7 lines 30-39. Further disclosed, is encoder subsystem E1 is programmed to generate the desired statistics, which are important to the encoding subsystem's (E2) specific bit rate control algorithm, column 7 line 50-52 and column 8 line 1-5 The examiner takes the position that encoder #1 (E1) and controlling processor combined allow for pre-encoding; and the quantization(s) would be an important statistic needed for encoding subsystem E2 specific bit rate control algorithm); selecting for each picture of the sequence one of the plurality of quantization parameter values responsive to the quantization parameter values and bitrate operating points of the neighboring pictures in the sliding time window (Wang teaches where a primary open loop rate control selects an optimized quantization parameter Q, by determining a desired size for an individual frame and comparing the size of the frame as encoded to the desired frame. Wang also discloses where if the frame size is greater than the desired size, quantization parameter Q is increased to reduce the size of the subsequently encoded frames to consume less bandwidth; and if the encoded frame size is less than the desired size, quantization parameter Q is reduced to increase the size of the subsequently encoded frame to fully consume available bandwidth. Further, Wang teaches where each frame is encoded in a manner which maximizes image quality while approaching full consumption of available bandwidth and guarding against exceeding available bandwidth, column 4 lines 14-30. The examiner takes the position that the encoded video would be encoded to the response of the selected quantization parameters since the video is encoded depending on the adjusted quantization

parameter Q); and encoding each picture of the sequence using the quantization parameter value selected for that picture (Boice teaches the statistical processing is accomplished within a processor couple between the first and second encoder and to develop encoding parameters for the second encoder. The second encoder then uses the enhanced encoding parameters to provide high quality and highly compressed video stream, column 3 line 29-35, and fig. 7 and 8).

21. Regarding claim 13, the analysis and rejection made in claims 1-12 also apply here. The combination of Wang, Boice, and Wu as a whole teaches a processor-based system. Hence a computer program for executing the necessary steps corresponding to the apparatus of claim 1 would have been inherent.

22. Regarding claims 14-22, the rejection and analysis made in claims 1-12 also apply. Claims 14-22 which recite a method for the corresponding apparatus would necessarily perform the method steps of claims 14-22.

23. In further regards to claim 14, Wang teaches a method of performing video rate control on a sequence of pictures to meet network traffic model restrictions, the method comprising: selecting for each picture of the sequence one of the plurality of quantization parameter values responsive to the quantization parameter values and bitrate operating points of the neighboring pictures in the sliding time window (Wang teaches where a primary open loop rate control selects an optimized quantization parameter Q, by determining a desired size for an individual frame and comparing the size of the frame as encoded to the desired frame. Wang also discloses where if the frame size is greater than the desired size, quantization parameter Q is increased to

reduce the size of the subsequently encoded frames to consume less bandwidth; and if the encoded frame size is less than the desired size, quantization parameter Q is reduced to increase the size of the subsequently encoded frame to fully consume available bandwidth. Further, Wang teaches where each frame is encoded in a manner which maximizes image quality while approaching full consumption of available bandwidth and guarding against exceeding available bandwidth, column 4 lines 14-30). The examiner takes the position that the encoded video would be encoded to the response of the selected quantization parameters since the video is encoded depending on the adjusted quantization parameter Q);

Wang is silent in regards to pre-encoding the sequence of pictures for each of a plurality of quantization parameter values; and encoding each picture of the sequence using the quantization parameter value selected for that picture.

However, Boice teaches pre-encoding the sequence of pictures for each of a plurality of quantization parameter values (Using the calculated statistics, adaptive encoding of the video sequence is then carried out by controlling one of more encoding parameters of the real-time process. For example, bit allocation, quantization parameter(s), encoding mode, etc., can be changed from frame to frame or marcroblock to macroblock within a given frame according to derived statistics of a characteristic (e.g., scene content) of the particular frame(s), column 7 lines 30-39 . Further disclosed, is encoder subsystem E1 is programmed to generate the desired statistics, which are important to the encoding subsystem's (E2) specific bit rate control algorithm, column 7 line 50-52 and column 8 line 1-5 The examiner takes the position that

encoder #1 (E1) and controlling processor combined allow for pre-encoding; and the quantization(s) would be an important statistic needed for encoding subsystem E2 specific bit rate control algorithm. Boice further teaches and pre-encoding means for encoding each picture of the sequence using the quantization parameter value selected for that picture (Boice teaches the statistical processing is accomplished within a processor couple between the first and second encoder and to develop encoding parameters for the second encoder. The second encoder then uses the enhanced encoding parameters to provide high quality and highly compressed video stream, column 3 line 29-35, and fig. 7 and 8).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of Wang with the technique of Boice for enhancing picture quality of an encoded video sequence while still obtaining a high compression rate by providing a real-time VBR a video encoding scheme.

Both Wang and Boice are silent in regards to a sliding window technique, however Wu et al., US 7,016,337 teaches where an encoder employs a "look a-head window" that is used to determine at what rate each channel must be sent. The "look a-head window" is used with the statistical re-multiplexer to determine to send out a number of bits corresponding to a time T for each of the channels, column 13 lines 65-67 and column 14 lines 1-20 and fig. 11.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of both Wang and Boice with the

technique of Wu for providing system that ensures that the bit rate of transmission matches the channel capacity.

24. Regarding claim 15, the combination of Wang, Boice, and Wu as a whole teaches a method as defined in claim 14 wherein the sequence of pictures comprises a sequence of video frames (Boice, video encoder is constructed to be adaptive to the video data received as a sequence of frames, column 7 line 20-23).

25. Regarding claim 16, see rejection for claim 4.

26. Regarding claim 17, see rejection for claim 5.

27. Regarding claim 18, see rejection for claim 6.

28. Regarding claim 19, see rejection for claim 7.

29. Regarding claim 20, see rejection for claim 8.

30. Regarding claim 21, see rejection for claim 9.

31. Regarding claim 22, see rejection for claim 10.

Conclusion

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391.

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Astle et al., US-5, 835,149; Legall et al., US-5, 929,916; Wang et al., US-6, 167,084; Rajagopalan et al., US-6, 192,154; Mohsenian et al., US-6, 278,735; Rajagopalan et al., US-6, 614,935; Hurst et al., US-6, 763,067; Wu et al., US-6, 847,656; Zhang et al., US-6, 925,120; Kim et al., US-6, 970,506; and Yu et al., US-7,099,389.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica Roberts whose telephone number is (571) 270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jessica M. Roberts/

ACTING SPE 8/31/07